

NON-PUBLIC?: N
ACCESSION #: 8809090043
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Braidwood Unit 1 PAGE: 1 of 3

DOCKET NUMBER: 05000456

TITLE: Reactor Trip Due Negative Rate Trip as a Result of Improper
Administrative Controls
EVENT DATE: 08/11/88 LER #: 88-016-00 REPORT DATE: 08/23/88

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Craig Chovan, Shift Engineer TELEPHONE #: 815-458-2801 Ext. 2202

COMPONENT FAILURE DESCRIPTION:
CAUSE: X SYSTEM: AA COMPONENT: FU MANUFACTURER: S156
REPORTABLE TO NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: On August 11, 1988, the Rod Control Urgent Alarm annunciated three times. Also, the C-11 Rod Stop alarm was annunciating prior to 223 steps on Bank D control rods. Preparations were made to check the power cabinet 1BD fuses. Separate discussions were held to discuss the details of checking the fuses. The unit operator was instructed to place rod control in MANUAL and to perform no rod movement during the time the power disconnect switch was open. The unit operator was occupied with normal duties and observed that the C-11 Rod Stop alarm had annunciated again and attempted to clear it by manually moving rods. When rod motion was demanded, the stationary gripper coils deenergized and Control Bank D Group 1, rods dropped. This caused an automatic reactor trip on High Flux Negative Rate. Contributing to this event was a lack of administrative controls to indicate an off-normal system status. The cause of the Rod Urgent alarms is attributed to two bad fuses in cabinet 1BD which were replaced. This event has been reviewed with the individuals involved. Additional administrative controls will be developed to aid the operator in identifying off-normal equipment status. This report will be included in the licensed operator Required Reading Program. There have been no previous occurrences.

(End of Abstract)

TEXT: PAGE: 2 of 3

Energy Industry Identification System (EIIS) codes are identified in the text as (xx)

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: Braidwood 1 Event Date: August 11, 1988 Event Time: 1316

Reactor Mode: 1 Mode Name: Power Operation Power Level: 100%

RCS (AB) Temperature/Pressure: NOT/NOP

B. DESCRIPTION OF EVENT:

There were no systems or components inoperable at the beginning of the event which contributed to the severity of the event.

On August 11, 1988, during normal operations on the day shift the Rod Control Urgent Alarm (AA) annunciated three times. It was determined that the problem was a phase failure on the movable gripper coil in power cabinet 1BD. It was decided to check and if necessary replace the fuses in the cabinet.

During the day shift and on previous shifts, the C-11 Rod Stop alarm was annunciating prior to 223 steps on Bank D control rods. The alarm was also clearing at the wrong setpoint.

At approximately 1300, preparations were made with the Station Control Room Engineer (SCRE), the unit Nuclear Station Operator (NSO), an extra NSO and the Technical Staff to check the power cabinet 1BD fuses. Separate discussions were held by the SCRE, prior to the start of the work; one discussion with the unit NSO and the other discussion with the extra NSO and the Technical Staff to discuss the details of checking the fuses.

At approximately 1311, the unit NSO was instructed to place rod control in MANUAL and to perform no rod movement during the time the power disconnect switch was open to replace the movable gripper coil fuses. The extra NSO and the Technical Staff Engineer met the Shift Engineer (SE) by the 1BD power cabinet. The Technical Staff Engineer showed the SE what the job entailed and the SE left. The extra NSO opened the disconnect switch at power cabinet 1BD and proceeded to take voltage readings across the fuses to ensure it was de-energized. The unit NSO was occupied with

normal duties and observed that the C-11 Rod Stop alarm had annunciated again.

At 1316, while the extra NSO was taking the voltage reading across the third fuse, the unit NSO attempted to clear the C-11 Rod Stop alarm by moving manually moving rods.

When rod motion was demanded the stationary gripper coils deenergized. Since power was removed from the movable gripper coils for cabinet 1BD, they could not energize.

As a result, Control Bank D Group 1, rods D4 and M12 dropped. This caused an automatic reactor trip on High Flux Negative Rate.

The appropriate NRC notification via the ENS phone system was made at 1458 on August 11, 1988, pursuant to 10CFR50.72(b)(2)(ii).

This event is being reported pursuant to 10CFR50.73(a)(2)(iv) - Any event or condition that resulted in manual or automatic actuation of any engineered safety feature, including the reactor protection system.

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C. CAUSE OF EVENT:

The root cause of the reactor trip was a cognitive personnel error by the licensed unit NSO.

Contributing to this event was a lack of administrative controls to indicate an off-normal system status.

The cause of the C-11 Rod Stop alarm annunciating prematurely on day shift was the failure to reset the Pulse/Analog converter when resetting the Rod Urgent Failure alarms which had occurred earlier in the day.

The cause of the Rod Urgent alarms is attributed to two bad fuses in cabinet 1BD.

D. SAFETY ANALYSIS:

There was no effect on plant or public safety as all systems operated as designed in response to the High Flux Negative Rate. This event is enveloped by the Final Safety Analysis Report (FSAR). A dropped Rod Control Cluster Assembly (RCCA) bank typically results in a reactivity insertion greater than $5E-3$ delta K/K which will be detected by the power range negative neutron flux rate trip circuitry. The reactor is tripped

within approximately 2.5 seconds following the drop of a RCCA bank. The core is not adversely affected during this period, since power is decreasing rapidly.

E. CORRECTIVE ACTIONS:

The immediate corrective actions were to establish stable plant conditions following the reactor trip.

The fuses in cabinet 1BD were replaced and the system line-up was returned to normal.

Action to prevent recurrence include:

1. This event has been reviewed with the individuals involved.
2. Additional administrative controls will be developed to aid the operator in identifying and maintaining off-normal equipment status. The controls being considered are fabrication of a movable guard and additional guidance on pre-job briefing and communication requirements. This will be tracked to completion by Action Item 456-200-88-18201.
3. This report will be included in the Licensed Operator Required Reading Program. This will be tracked by Action Item 456-200-88-18202.

F. PREVIOUS OCCURRENCES:

There have been eight previous reactor trips due to personnel error. In each case corrective actions were implemented addressing both root and contributing causes. However, the cognitive personnel error in this event is different in that it involved a conditioned response to an alarm. Previous corrective actions are not applicable to this event.

G. COMPONENT FAILURE DATA:

Manufacturer Nomenclature Model Number MFG Part Number

Chase-Shwmut Fuse Type 1 30 amp A60X30

ATTACHMENT # 1 TO ANO # 8809090043 PAGE: 1 of 1

Commonwealth Edison
Braidwood Nuclear Power Station
Route #1, Box 84
Braceville, Illinois 60407

Telephone 815/458-2801

BW/88-1022

August 29, 1988

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Dear Sir:

The enclosed Licensee Event Report from Braidwood Generating Station is being transmitted to you in accordance with the requirements of 10CFR50.73(a)(2)(iv) which requires a 30 day written report.

This report is number 88-016-00; Docket No. 50-456.

Very truly yours,
/s/ R. E. Querio
R. E. Querio
Station Manager
Braidwood Nuclear Station

REQ/AJS/jab
(7126z)

Enclosure: Licensee Event Report No. 88-016-00
cc: NRC Region III Administrator
NRC Resident Inspector
INPO Record Center
CECo Distribution List

ATTACHMENT # 2 TO ANO # 8809090043 PAGE: 1 of 1

DEVIATION REPORT

DVR NO.

20 - 01 - 88 - 182

STA UNIT YEAR NO.

PART 1 TITLE OF DEVIATION OCCURRED

Rx Trip Due to Negative Rate Trip 8-11-88 1316

DATE TIME

SYSTEM AFFECTED PLANT STATUS AT TIME OF EVENT TESTING

N/A

RD MODE 1 POWER(%) 99.5 WORK REQUEST NO. NO

DESCRIPTION OF EVENT

At 1316, 8-11-88, Unit 1 Rx tripped. The first out annunciator was NIS power range neutron flux negative rate reactor trip. The negative rate trip occurred due to Control Bank D Group 1, being dropped. The control rods were dropped when movable gripper coil, in power cabinet 1BD, bus disconnect fuses were being replaced and simultaneous rod movement occurred. The Reactor Trip with Lo Tave 514 degrees F caused FW isolation and subsequent S/G Lo Lo level caused AFW actuation.

POTENTIALLY SIGNIFICANT EVENT PER NSD DIRECTIVE A-07 NO

NOTIFICATION MADE 4 HOUR 1458 J. Kuchenbecker 8-11-88

TIME RESPONSIBLE SUPERVISOR DATE

PART 2 OPERATING ENGINEER'S COMMENTS

None

NOTIFICATION Resident Inspector 8/12/88 1200

30 DAY REPORTABLE/10 CFR REGION III DATE TIME

50.73(a)(2)(iv)

T. J. Maiman/D. P. Galle 8/12/88 1200

NSD DATE TIME

L.E.R. # 88-016 TELECOPY N/A

CECO CORPORATE OFFICER DATE TIME

PRELIMINARY REPORT

COMPLETED AND REVIEWED Robert J. Ungeran 8/12/88

OPERATING ENGINEER DATE

INVESTIGATION REPORT & RESOLUTION

ACCEPTED BY STATION REVIEW /s/ David J. Miller 26AUG88 /s/ 8/26/88

/s/ Robert J. Ungeran 8/29/88

RESOLUTION APPROVED AND

AUTHORIZED FOR DISTRIBUTION /s/ R. E. Querio 9/1/88

STATION MANAGER DATE

86-5176 (Form 15-52-1) 11-20-85

*** END OF DOCUMENT ***
